NSU Oceanographic Center Hosts Port Everglades Harbor Announcement of the Relocation of Commercial Anchorage

On March 6, a press conference was held at the NSUOC by the Port Everglades Harbor Safety Committee, formally announcing the reconfiguration of the commercial ship anchorage in Fort Lauderdale. The modifications were made after a review of commercial vessel groundings and in an effort to protect fragile living coral reef areas adjacent to current anchorage locations.

The NSUOC and its National Coral Reef Institute (NCRI) are both represented on the Harbor Safety Committee, which is chaired by the Coast Guard Sector Miami and includes representation from federal, state, and county agencies as well as local maritime and environmental stakeholders. Richard Dodge, Ph.D., NSUOC dean and NCRI executive director, opened the press conference, highlighting the contribution of NCRI and NSUOC researchers to this decision, stating “The new anchorage configuration represents a giant step forward in attempting to solve ship anchor and grounding issues at the Port Everglades anchorage. The reconfiguration was a partnership effort among all the stakeholders and represents a joint effort to both preserve the anchorage function and to protect the invaluable reef resources.” This was truly a stakeholder event, which resulted in a management decision with intended positive consequences.

Progress of the new anchorage will be closely followed and evaluated for success. Enforcement is a key factor in ensuring no further reef injury. The Coast Guard banned ships from anchoring in a rectangle

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of water off Fort Lauderdale after years of ship groundings on fragile coral reefs.

This area, known as Anchorage A, runs parallel to the beach and is where cargo ships waited for instructions or berths at Port Everglades. Since 1994, 10 ships have run aground, and many more have dragged anchors on the reefs, smashing coral and shearing off sponges from ecosystems that took thousands of years to develop. More than 11 acres of coral reef have been obliterated.

The revised anchorage plan intends to protect the reefs without harming the port’s multibillion-dollar business.

National Coral Reef Institute Publishes Coral Reefs of the USA

Bernhard Rieg1, Ph.D., OC professor and NCRI associate director, and Richard E. Dodge, Ph.D., OC dean and NCRI executive director, have just published Coral Reefs of the USA, which is the first volume in the new series Coral Reefs of the World.

Rieg1 and Dodge serve as editors of the book, which provides a complete overview of the present status of knowledge regarding all coral reef areas within the United States and its territories. It is written by the most experienced authorities in their fields and geographic areas. Stretching from the Caribbean to the western Pacific, the coral reefs of the United States span extensive geographic and biotic diversity, occur in a wide variety of geomorphological settings, and provide a representative cross-section of Holocene reef-building. This book is of broad interest to reef scientists, managers, and conservationists. For the first time, complete scholarly reviews are given for the geology, geomorphology, and the biology of reefs encompassing a vast area stretching from the Mariana Islands in the west, Samoa in the south, Hawaii in the north, and the Virgin Islands in the east. This book provides up-to-date information about stressors and the biotic responses of the reefs, as well as the geological explanations of why these reefs exist in the first place. It represents a baseline-reference for all those who are engaged in research or management of these coral reefs and for those who simply enjoy being well-informed about one of the most iconic ecosystems of the United States.

Coral Reefs of the USA, written by 145 authors, all experienced authorities in their fields, is the first complete compilation of geology and biology information for all U.S. coral reefs. The book is richly illustrated and contains much information that has never been published before. There is also an extensive literature list that is useful as a guide to further study on coral reefs.

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Senator Bill Nelson’s Representative, Willowstone Lauson, regional director; Richard Dodge; and Congressman Ron Klein’s Representative, Laurie A. Watkins, M.P.A.
People on the Move

From January 30 to February 8, Edward O. Keith, Ph.D., was in Veracruz, Mexico, pursuing a number of upcoming projects and maintaining contacts with his collaborators there.

His trip included the following:

- the Universidad Veracruzana (UV) in Xalapa, where he visited his long-term collaborators at the Institute of Biological Investigations.
  
  Keith and Enrique Portilla, Ph.D., of UV, received an NSU President’s Faculty Research and Development Grant in 2006 to support studies of Antillean manatees (Trichechus manatus manatus) in the Alvarado Lagoon System in Veracruz state, Mexico. They are in the final stages of data analysis for this project.

- the National Institute of Archaeology and History, where Keith is beginning a collaboration with doctors Ponciano Ortiz and Maria del Carmen Rodriquez that will examine the cultural and historical importance of the Antillean manatee in this region.

- the city of Loma Bonita to visit Susana Garcia, Ph.D., and Martha Aquilera, M.S., collaborators at the University of the Papaloapan who are trying to initiate aquaculture and water quality projects in southern Veracruz and northern Chiapas.

- a visit with colleague Marco Zavala, who is involved in biodiversity and reforestation projects in the region of Las Tuxtlas, which has been classified as a Mexican National Biosphere Reserve and Protected Area.

  Keith met with Ing. Jose Faustino Escobar, the director of the reserve, to discuss development of projects that will examine the biodiversity and water quality of the area.

- Northern Veracruz to visit colleagues at the UV campus in Tuxpam.

  Keith hosted a student, Ibiza Martinez, in Florida last fall, and he wanted to visit her study area where she is investigating bottlenose dolphin (Tursiops truncatus) distribution and habitat use. Keith met with Martinez’s dissertation adviser, Arturo Serrano, Ph.D., to discuss a possible collaborative investigation of the birds of the Alvarado Lagoon.

- the El Tajin archaeological site near the city of Poza Rica.

  Later that month, Keith returned to the Mexican state of Yucatan, establishing contacts and collaborations to advance a proposed study of the birds of Arrecife Alacranes, a coral atoll with five small islands located about 75 miles north of the Yucatan peninsula in the Gulf of Mexico. Arrecife Alacranes is the largest reef in the southern Gulf of Mexico and was designated a National Park in 1994 by the Mexican government. Keith met with Jose Arturo Garcia, a student at the Center for Ecology and Fisheries, Universidad Veracruzana (UV), in Boca del Rio, Veracruz, Mexico, under the direction of Enriqueta Velarde, Ph.D.

NCRI Plays Pivotal Role in Madagascan Marine Conservation

Sam Purkis, Ph.D., NCRI assistant professor, recently returned from a field campaign in the waters of Andavadoaka, an isolated village in Southwest Madagascar. Purkis was conducting work with the goal of mapping a vast coral reef system that has been flagged to attain protected status in the near future. This work is a precursor to the development of the ‘Velondriake’ community-managed protected area network of Southwest Madagascar. Protection from this effort will encompass pristine marine and terrestrial habitats, including rare stands of baobab trees, one of the many species unique to Madagascar. Purkis was funded and supported by Blue Ventures, an award-winning, British, nongovernmental organization dedicated to marine conservation in Madagascar and a key proponent of the Velondriake network. Purkis was joined in the field by a team of researchers from the World Wildlife Fund led by NSU graduate Vola Ramahery, who attended NSUOC supported by a Fulbright Scholarship between 2004 and 2006.

Ramahery has since returned to her native Madagascar. She heads marine affairs for WWF in the region from her base in the coastal town of Toliara, though she makes frequent forays to the isolated villages of the region to conduct social and marine monitoring projects.
Poster Presentations

Charles Messing, Ph.D., with coauthors John K. Reed (Harbor Branch Oceanographic Institute at Florida Atlantic University) and Sandra D. Brooke (Oregon Institute of Marine Biology), presented the poster “A Possible Role for Agglutinated Foraminifers in the Growth of Deep-water Coral Bioherms” at the Joint Ocean Sciences conference in Orlando, Florida, March 3–7, 2008. The work grew out of research funded by NOAA’s Office of Ocean Exploration.

NSUOC students Ethan Machemer and Bryan Armstrong presented a poster at the annual meeting of the American Fisheries Society Florida Chapter in Ocala, Florida, February 19–21. The poster, coauthored by David Kersetter, was titled, “A Spatial Approach to Catch and Effort with Pelagic Longline Gear.”

Nicole Knauer O’Brien presented a poster entitled “An Analysis of Kogia Stranding Data from the Southeastern United States” at the Southeast and Mid-Atlantic Marine Mammal Symposium held in Charleston, South Carolina, on March 28–30, 2008. The poster was based on her master’s degree thesis research (work funded by a grant from the John H. Prescott Marine Mammal Rescue Assistance Program administered by NOAA). Coauthors on the poster were NSUOC faculty member Edward O. Keith, Ph.D., and Daniel K. Odell, with the Hubbs-Sea World Research Institute in Orlando, Florida.

On March 2–7, Edward O. Keith attended the Ocean Sciences meeting held in Orlando, Florida. He presented a poster entitled “Mercy Transport and Bioaccumulation in the Alvarado Lagoon System, Veracruz State, Mexico.” Keith and his collaborator, Jane Guentzel, Ph.D., from Coastal Carolina University in Conway, South Carolina, received an NSU President’s Faculty Research and Development Grant in 2004 to support this project. The results were published in December 2007 (see publications section).

Four Oceanographic Center graduate students attended the 17th Biennial Conference on the Biology of Marine Mammals held November 28–December 3 in Cape Town, South Africa, and presented posters describing the results of their M.S. thesis work, under the direction of Edward O. Keith, Ph.D. The students, Meghan Bills, Nicole O’Brien, Rachel Stronach, and Kym Walsh, attended the conference, which was organized by the Society for Marine Mammalogy. Kym Walsh was also invited to present her results in oral form. Keith presented a talk at a workshop in advance of the conference. It was entitled “Conservation Management of Sirenians in Developing Countries and Indigenous Communities.”
Kids Ecology Corps Visits

On Thursday, March 7, the Oceanographic Center welcomed the Kids Ecology Corps as part of the Fairchild Immersion Day Program with John U. Lloyd State Park. This event is part of the Fairchild Challenge, a program that fosters interest in the environment. The program encourages students to appreciate the beauty and value of nature, develop critical-thinking skills, understand the need for biodiversity and conservation, tap community resources, become actively engaged citizens, and recognize that individuals do indeed make a difference.

Fifteen 9th–12th graders, their Kids Ecology Corps supervisors, and their park hosts toured the Oceanographic Center to see an active marine research facility and to experience the basic and applied research conducted by its faculty members and students. Hosted by NSUOC administrator and alumna Melissa Dore, the corps members experienced how researchers collect and sort marine geology samples and learned how to interpret what they found.

The first event of its kind held in Broward County, it is hoped that the Fairchild Challenge and the OC will continue the event on an annual basis.

Amy Hirons, Ph.D., and several of her students attended the 2008 Ocean Sciences Meeting in Orlando, Florida, March 3–7, 2008. Hirons, along with two of her students, Madhura Mokashi and Gabriela Wisniewski, presented posters at the meeting. Wisniewski presented a poster entitled “Abundance and Distribution of Two Important Decapod Larval Species, Callinectes Sapidus and Menippe Mercenaria, in the Gulf Stream off Southeast Florida” while Mokashi’s poster presentation was “Investigation of Recruitment Patterns of Spiny and Slipper Lobsters (Family: Palinuridae and Scyllaridae) in the Gulf Stream off Southeast Florida, USA.”

Hirons presented preliminary data on the temporal change in trophic status of the Hawaiian monk seal. She also chaired a session on “Reconstruction of Global Paleoceanic Environments.” Jessica Bostock, Stephanie Healey, and Nina Thompson, members of Hirons’s lab, also attended the meeting and enjoyed many informative sessions during the five-day conference.

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Missy Dore, describing how scientific research is done
Distinguished Speaker Seminar

On April 4, Nick Funicelli, Ph.D., presented the second in the Oceanographic Center’s Distinguished Marine Scientist Seminar Series with a talk titled “Bringing Science and Technology into Ecology: Marine Protected Areas from the Tortugas to the Kennedy Space Center.” More than 60 students, faculty and staff members, and guests attended and enjoyed a buffet dinner on the new deck afterwards.

Nick Funicelli received his Ph.D. in Marine Biology from the University of Southern Mississippi (1975). He earned both his M.S. in Marine Science (1972) and his B.A. in Biology (1970) from C.W. Post College in Long Island, New York.

Funicelli has held positions with Consolidated Edison of New York, the Florida Integrated Science Center in Miami, and the St. John Field Station. He has held an adjunct faculty position with the Department of Fisheries and Aquatic Sciences at the University of Florida for more than 5 years. He has also conducted research on the effect of fishing on fish abundances in Everglades National Park and Merritt Island National Wildlife Refuge. Funicelli served on Tortugas 2000—the large group of stakeholders that designed the largest Marine Protected Area in the continental U.S., as well. He recently retired from the Federal government, for which he served as an administrator, manager, and research fisheries biologist with the United States Geological Survey, National Biological Service, U.S. Fish and Wildlife Service, Environmental Protection Agency, and Army Corps of Engineers.

A reception consisting of catered finger-foods and beverages followed the seminar.

Publications:


M.S. degree specialties are marine biology, coastal zone management, and marine environmental science. Each course carries three credit hours or may be audited. Tuition is $745 per credit hour (50 percent less for audit). Classes are 12 weeks in length and meet once a week from 6:30 to 9:30 p.m. at the Oceanographic Center (unless otherwise specified.) Registration ($25 fee) starts June 17 and takes place at www.webstar.nova.edu or at the Oceanographic Center. For further information, call Richard Spieler or Melissa Dore at (954) 262-3610 or 800-396-2326, or email imcs@nova.edu. More information can be found at the Web site: www.nova.edu/ocean.

The Belize field course was held at South Water Caye, Belize, a remote island situated on the barrier reef tract 14 miles offshore. The class was led by James D. Thomas, Ph.D., and assisted by Magdalena Kwapinska. The group spent a majority of their time snorkeling and diving on the reef and waters of the lagoon and back reef. Daily lectures and field survey assignments were carried out on a variety of reef habitats. Class projects included identifying distinct zones of the reef from the lagoon seaward to the drop off. Directly landward of the barrier reef lies the back reef lagoon, characterized by scleractinian corals and seagrass beds. After dinner, students gathered in the lab to record data, map reef habitats, and present assigned scientific papers related to coral reef ecology. Students had the opportunity to compare several reef locations, such as the Fourth Cut, Whale Shoals, and the Glover's Reef.
Ph.D. Degree Offered

The Oceanographic Center offers a doctoral degree in oceanography/marine biology. The program requires a minimum of 90 credits beyond the baccalaureate. At least 48 credits must consist of dissertation research, and at least 4 credits must consist of upper-level coursework. Required courses include the four M.S. core courses. Other upper-level coursework is usually in the tutorial mode with the major professor. Tuition is $5,195 per quarter.

Student Government News

The NSUOC SGA Activities Committee enjoyed the first of their monthly events on Saturday, April 19, with a Full Moon Bike Ride tour of Shark Valley’s 15-mile bike loop in the Everglades. Sixteen students and their guests set off from the OC to join ranger Laurie Humphreys, who led the group through the first seven miles. At the midway point, the group climbed the tower, enjoyed a snack, and watched a beautiful sunset and moonrise. The way back was guided by only the moonlight and fireflies that covered the sawgrass prairies.

Mark Rogers and Twyla Harrington

M.S. students and employees at NSUOC, presented on marine science careers to about 75 students at McMillan Middle School’s Career Day, held April 22 in Miami, Florida. They discussed career choices and all the different fields you can work in with a marine biology degree. As an A-ranked school, McMillan promotes early development in students toward careers. Many Miami schools are now requiring students to choose a “major” for their four years of high school and take electives based on this choice (for example: marine biology courses instead of regular biology for those students choosing marine science as their “major”).

April 24 was “Bring Your Child to Work Day” at NSU, and Rogers and Harrington were busy once again doing a presentation on marine science careers for the Huizenga School of Business. They talked to two groups, each consisting of about 100 employees and their children who ranged in age from 7 to 15. The title of their presentation was “Under the Sea.”

We hope you will join us for future events. Look for emails and notices.

May  Airboat ride and swamp safari
June  Fishing trip
July  Snorkel/scuba in the Keys
Alumni News

Ryan Moyer earned his M.S. in Marine Biology from the Oceanographic Center in spring 2003. His thesis is titled “Macrobenthic Spatial Patterns and Community Structure on the Broward County, Florida (USA) Reefs” and was supervised by Bernhard Riegl, Ph.D.

After completion of his thesis, he continued working at NSUOC as a research associate with the National Coral Reef Institute. During this time, he was involved in a variety of projects ranging from mapping the distribution of seagrass and drift algae in the Indian River Lagoon to ROV surveys of deep-water reef biota on both sides of the Florida Strait.

In 2004, Moyer said goodbye to NCRI and South Florida in order to pursue his Ph.D. at the University of Pennsylvania under the guidance of Andréa Grottoli. During his time there, Moyer worked with the National Science Foundation’s GK–12 program as an access science teaching fellow. The NSF GK–12 program partners graduate students in math and sciences with teachers in inner-city school districts, with the goal of improving education and general interest in math and sciences for students in grades K through 12. During his fellowship tenure, Moyer was partnered with teachers in the EcoTech division of University City High School in West Philadelphia, where he taught earth science, ecology, biology, GIS, and computer science to 10th- and 11th-grade students.

After completing one year of study at U.Penn., Moyer followed his adviser to continue his Ph.D. work and landed at the School of Earth Sciences at Ohio State University. Since moving to Ohio State, Moyer has worked as a graduate teaching assistant in the School of Earth Sciences, teaching laboratory sections of undergraduate classes entitled “Intro. to Oceanography” and “Planet Earth: How It Works.” He has also worked as a graduate research assistant in the Stable Isotope Biogeochemistry Laboratory at Ohio State. In 2006, his GRA assignment sent him to Kaneohe Bay in Hawaii (Oahu), where he was involved in field and tank experiments for a project examining carbon utilization in bleached and recovered corals.

In addition to his teaching and research responsibilities, Moyer’s main focus at both U.Penn. and Ohio State has been his own dissertation research. That work examines the impact of land-use on carbon flux from land to the coastal oceans. As part of his work, Moyer is using a dual isotope ($^{13}C$ and $^{14}C$) approach in coral skeletons to develop proxy records of carbon cycling from land to coastal tropical oceans. It is important to understand land-ocean carbon flux and any changes that humans may be imposing on it, because inter-reservoir fluxes are poorly constrained in the global carbon cycle and local carbon cycling in the tropics is very poorly understood. In addition, many stresses that are known to affect coral reefs can be directly attributed to changes in land-use practices and the associated increases in sedimentation, nutrients, and pollutants reaching coastal marine environments. Corals growing near the mouths of small tropical rivers are useful in examining these problems because they have annually banded skeletons and include isotopes and trace elements in their skeletons that reflect the seawater chemistry during the time of skeletal deposition. Field work for his dissertation research began in September 2004 at three sites in Puerto Rico and continued through March 2008.

Moyer has presented portions of his dissertation research at the 2006 and 2008 Ocean Sciences Meetings (Honolulu and Orlando, respectively) and the 2007 ASLO Aquatic Sciences Meeting in Santa Fe, New Mexico. He is also scheduled to present his work at the upcoming International Coral Reef Symposium in Fort Lauderdale.

At present, Moyer is working to finish his Ph.D. and is scheduled to defend his dissertation research in fall 2008. He will then begin the next phase of his career as a postdoctoral fellow with the U.S. Geological Survey. Moyer was recently awarded and accepted a Mendenhall Postdoctoral Fellowship with the USGS and will be examining questions about coral reefs and ocean acidification at the Center for Coastal and Watershed Studies in St. Petersburg, Florida, by the end of 2008.
Other News

Kevin Helmle was chosen as the Oceanographic Center’s Student of the Year and participated in the annual Stuey awards held on April 15 as the NSUOC’s nominee for NSU Student of the Year. Helmle is a doctoral student at the NSUOC. He got his master’s degree from the NSUOC in 1998 and works with the National Coral Reef Institute (NCRI), studying the effects of climate change and anthropogenic impacts on coral growth and calcification. He has participated in a number of scientific meetings, presenting his work orally and in posters, and was recently featured on a History Channel television show that focused on climate change.

Another NSUOC nominee for the Stuey awards was Peggy Oellrich, who was one of only five people from the entire university who were nominated as NSU Staff Person of the Year. As the center’s coordinator, Oellrich is responsible for keeping the physical plant in order. She is always looking for ways to improve the facility without impacting the research personnel. Recently, the NSUOC had a new modular delivered to replace their lost houseboat. She coordinated placement with facilities management and the dean’s office. This responsibility is only one of many that Oellrich handles daily to keep the NSUOC running smoothly. Although she didn’t win, the nomination alone spoke well of her hard work.

NSU had team participation in this year’s Corporate Run, held on Thursday, April 3, in Huizenga Plaza of Fort Lauderdale’s Bubier Park. More than 4,000 runners and walkers from 151 organizations had teams that competed in this physical fitness event dedicated to supporting health and wellness in the corporate environment. Five NSUOC students/staff members participated in the event: Stephanie Saelens, Allison Brownlee, Maureen Trnka, Adam St. Gelais, and Kendra Maroni.

Congratulations go out to Stephanie Saelens and Allison Brownlee for the fastest women’s times on the NSU Team! NSU also placed third in the Most Colorful Category for the T-shirt Contest. Special thanks to Adam St. Gelais for drawing the shark!

Thanks to the following people for making this event possible: Mark Andrew Jones, Human Resources; Ginny Pardo, Budget; and John Santulli, Facilities Management.

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Farewell to the Queen

Hundreds lined the inlet and beaches on April 10 to watch the Queen Elizabeth 2 depart Port Everglades for the final time, and faculty and staff members and students of the Oceanographic Center had a vantage view for the historic event. Her maiden voyage was in 1969, and she has spent 36 winters here, but it was her time to retire. She will end up in Dubai in November, where she will become a floating hotel. The ship was led out of the port with water spraying from a barge and dozens of pleasure craft following in her wake.

As she started out of the inlet, the Sovereign of the Sea, sitting in her berth, blew her horn several times in goodbye and the majestic QE2 answered with her own deep booming blasts.

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Jose Lopez, Ph.D., associate professor at the NSU Oceanographic Center, has been asked to serve as an associate editor for the American Genetic Association’s Journal of Heredity. Lopez has several colleagues on the board, including Stephen J. O’Brien, Ph.D., who served as the editor in chief for many years.

Lopez says he is honored to accept the invitation and have the chance to serve the association and the wider genetics community by editing manuscripts and handling reviews for the high-quality journal. The bimonthly journal publishes scientific articles on a wide variety of organismal systems and genetics-related topics.
A resident iguana watching the QE2 pass by from his perch on a piling

The QE2 leaving the port for the last time
(Photo thanks to the Port Everglades Pilots Association)

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